June 25, 2003

Dr. Ronald L. Simard
Nuclear Energy Institute (NEI)
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

SUBJECT: RESPONSE TO LETTER ON EARLY SITE PERMIT TOPIC 12 (ESP-12), NEPA CONSIDERATIONS OF SEVERE ACCIDENT ISSUES

Dear Dr. Simard:

The purpose of this letter is to respond to your second letter on the subject early site permit (ESP) topic dated April 28, 2003. In this letter, NEI outlined the approach that the prospective ESP applicants are going to use in preparation of their respective applications. NEI states that the approach was based on the March 26, 2003, public meeting to discuss the issue and is consistent with the staff position contained in the February 12, 2003 letter and SECY-91-041. This letter does not change any of the understandings and expectations stated in our letter dated February 12, 2003 regarding consideration of severe accidents. We confirm the understandings and expectations cited in your letter for the prospective ESP applicants with the clarifications as listed below:

Understandings and expectations:

1. The staff agrees. With respect to severe accident mitigation alternatives, the staff recognizes that if sufficient design information is not available at the ESP stage, then the NRC review and findings will be deferred to the COL stage.

2. The staff agrees. The staff expects the ESP applicants to include a discussion of severe accident impacts in their environmental reports.

3. The staff agrees. Draft ESP Review Standard RS-002 references ESRP Section 7.2 as one acceptable methodology for reviewing an applicant's severe accident impacts assessment.

4. The prospective ESP applicants have proposed to address the environmental impacts of severe accidents through a "comparative discussion" of the candidate sites with the evaluations and conclusions contained in generic NRC severe accident studies, and to demonstrate that the site-specific populations and meteorological characteristics are consistent with sites considered in the generic studies. Although a comparative discussion may provide insights into population and meteorological differences relative to previous studies, based on the level of information provided in the NEI letter it is not clear that this discussion will provide an adequate basis for concluding that the site contains no characteristics which make it unsuitable for construction and operation of a nuclear power plant.

The staff analyses of severe accident impacts would be similar in scope and content to the site-specific analyses of environmental impacts typically addressed in more recent site-specific final environmental impact statements and generic environmental impact statements (such as NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants"). These studies typically considered multiple exposure pathways (i.e., airborne releases, releases to groundwater, and fallout onto open bodies of water) and assessed impacts in terms of population exposure, early and latent fatalities, and economic costs. If the staff needs additional information to perform these analyses, then the staff will request that ESP applicants provide supplementary information as described above.

5. NEI states that the NRC will base its finding related to severe accident environmental impacts on the expectation that severe accident impacts of future nuclear plants will be bounded by those of existing plants, which have been determined to be "small." This expectation would be based on the Commission's 1985 Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants.

   The NRC will perform its review on severe accident environmental impacts in accordance with ESRP Section 7.2. If specific plant design information is available (e.g., a detailed design with a Level 3 PRA), then this information would be used in the evaluation. However, even in the absence of a detailed plant design (e.g., the specific reactor type or technology is undecided), a severe accident impacts analysis is technically feasible at the ESP stage using a PPE approach and the existing guidance in ESRP Section 7.2. Such an approach could involve characterizing the spectrum of credible releases from candidate future plant designs, in terms of representative source terms and their respective frequencies, and using these release characteristics in conjunction with site-specific population and meteorology to determine site-specific risk impacts for the surrogate design. Release characteristics could be developed through a survey of severe accident analyses for previously certified ALWRs and/or operating reactors. Risk impacts could be assessed using the same metrics as in previous plant-specific and generic EISs, such as NUREG-0974, "Limerick 1 and 2 Operating License" and NUREG-1437. These metrics include population dose, early and latent fatalities, and economic costs. The metrics would be used to determine the acceptability of the proposed site at the ESP stage.

6. With respect to the provisions of 10 CFR 52.39, the staff expects that the COL application would demonstrate that the severe accident analysis performed for the ESP is bounding for the proposed facility. If a COL applicant adequately makes such a demonstration, then the applicant may avail themselves of 10 CFR 52.39.

Please contact Stephen Koenick at 301-415-2985, if you have any questions on this matter.

Sincerely,

/RA/

James E. Lyons, Director
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Project No. 689

cc: See next page

Please contact Stephen Koenick at 301-415-2985, if you have any questions on this matter.

Sincerely,

/RA/

James E. Lyons, Director
New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation

Project No. 689

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